AMSAT News Service Weekly Bulletins
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AMSAT NEWS SERVICE
ANS-219

ANS is a free, weekly, news and information service of AMSAT North America, The Radio Amateur Satellite Corporation. ANS reports on the activities of a worldwide group of Amateur Radio operators who share an active interest in designing, building, launching and communicating through analog and digital Amateur Radio satellites.

Please send any amateur satellite news or reports to:
ans-editor@amsat.org

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SB SAT @ AMSAT $ANS-219.01
AMSAT-NA On-Orbit Again with ARISSat-1

AMSAT News Service Bulletin 219.01
  From AMSAT HQ SILVER SPRING, MD.
August 7, 2011
To All RADIO AMATEURS
BID: $ANS-219.01

AMSAT President Barry Baines, WD4ASW, observed, "Welcome to a new era as AMSAT returns to space with ARISSat-1/KEDR. I encourage all hams, SWLs, educators, and experimenters to enjoy the unique opportunity presented by this mission to learn about amateur radio in space, enhance and improve your station, and hone your operating skills as you try out all of this satellite's features."

Barry continues, "ARISSat-1/KEDR marks a new type of satellite which has captured the attention of the national space agencies around the world for the unique educational opportunity we have been able to design, launch, and now operate. By designing an educational mission aligned with NASA's Science, Technology, Engineering, and Mathematics goals amateur radio operators around the world can now enjoy a new satellite in orbit."

ARISSat-1/KEDR Project Manager, Gould Smith, WA4SXM said, "Dozens of amateur radio volunteers, AMSAT, ARRL, NASA, and Energia have teamed up for this successful mission to bring you the most unique and innovative amateur radio satellite mission flying 220 miles above your QTH at 17,500 mph! Congratulations to all who made ARISSat-1 successful!"

Continuing, Gould said, "ARRISat-1/KEDR has been developed, built, and tested by a remarkable team of radio amateurs. As the Project Manager for ARISSat-1/KEDR these past three years I have had the opportunity to work with these creative people to get to where we

are now ... IN ORBIT!"

Watch the video of ARISSat-1/KEDR Project Manager Gould Smith
WA4SXM's interview on WBIR TV about the new Amateur Radio satelite
ARISSat-1 which 'takes distance learning to new heights':
http://tinyurl.com/3fc8f9n (Soutgate ARC News)

ARISSat-1 Project Web Page: http://www.arissat1.org
ARISSat-1 Operational News: http://www.amsat.org
How to receive ARISSat-1:
http://www.amsat.org/amsat-new/ARISSat/ARISSatHowTo.php

[ANS thanks AMSAT President Barry Baines, WD4ASW and ARISSat-1/KEDR
  Project Manager, Gould Smith, WA4SXM for the above information]

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SB SAT @ AMSAT $ANS-219.02
NASA Education Express Message - ARISSat-1/KEDR Deployment

AMSAT News Service Bulletin 219.02
  From AMSAT HQ SILVER SPRING, MD.
August 7, 2011
To All RADIO AMATEURS
BID: $ANS-219.02

The NASA Education Office posted news of the ARISSat-1/KEDR deploy-
ment in their August 4 Education EXPRESS message. The Express message
below was sent to 18,516 EXPRESS subscribers and to 1,285,892 NASA
Twitter account subscribers. Using social media services to expand
the range for NASA education messages has increased the total audi-
ence to approximately 1,304,408 people. (Yes, that's 1.3 million
people).

[NASA EXPRESS Message follows]

ARISSat-1 Satellite Launched

A satellite with amateur radio capabilities and a student-designed
experiment was released into orbit around Earth on Aug. 3, 2011,
during a spacewalk outside the International Space Station. The sat-
ellite is transmitting signals containing information that students
around the world can access.

ARISSat-1, which stands for Amateur Radio on the International Space
Station Satellite-1, contains a student-designed experiment and other
equipment that students can use to learn more about space and space
exploration. The rectangular spacecraft is covered by six solar panels
that will charge the batteries in the satellite for about six months
as it orbits Earth. Spoken telemetry values, with data such as temp-
erature and battery life, are intended to promote science and mathem-
atics education by encouraging school children to listen to the satel-
lite, track its progress and plot the changes.

The project website provides free downloadable software that can be
used to decode the data. In addition to data, the satellite will trans-
mit 24 pre-recorded greetings in 15 different languages -- French,
Spanish, German, English and Chinese, to name a few.

Check out the ARISSat-1 website at http://arissat1.org/ for information
on data transmissions, contests and student activities.

Questions about ARISSat-1 should be directed to teachers@arissat1.org.

NASA Education listserv: http://www.nasa.gov/education/express
NASA Twitter: http://twitter.com/nasa
NASA Blogs: http://blogs.nasa.gov/cm/newui/blog/blogs.jsp
NASA Education Express Blog:
http://blogs.nasa.gov/cm/blog/educationexpress

[ANS thanks AMSAT President Barry Baines, WD4ASW for forwarding this news to the AMSAT News Service]

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SB SAT @ AMSAT $ANS-219.03
ARISSat-1/KEDR Deployed on August 3 - Signals Received

AMSAT News Service Bulletin 219.03
From AMSAT HQ SILVER SPRING, MD.
August 7, 2011
To All RADIO AMATEURS
BID: $ANS-219.03

ARISSat-1/KEDR was deployed from the ISS during EVA-29 on Wednesday, August 3 by Cosmonaut/Flight Engineers Sergei Volkov and Alexander Samokutyaev. First reported signals were received by JR8LWY with copy of the telemetry beacon as the satellite passed over Japan.

Full operational capability of ARISSat-1/KEDR was quickly confirmed after initial concern of a missing or damaged 70cm receiver antenna on the satellite.

145.950 MHz FM Downlink - OPERATIONAL

FM transmissions will cycle between a voice ID as RS01S, select tele-metry values, 24 international greeting messages in 15 languages and SSTV images. One of the messages will be a conversation between Yuri Gagarin and ground control.

If you successfully receive the SSTV transmissions, you are invited to upload your picture to to the ARISS SSTV Gallery:
http://www.amsat.org/amsat/ariss/SSTV/

435 MHz - 145 MHz Linear Transponder - OPERATIONAL

The linear transponder operates in Mode U/V (70 cm Up, 2m Down). It is an 16 KHz wide inverting passband and the convention will be to TX LSB on the 435 MHz uplink and RX USB on the 145 MHz downlink.

The full status of the 70cm antenna is unknown however reports of contacts and full uplink-downlink operation are being received:

+ Drew, KO4MA reported on August 4, "I was able to hear myself with as little as 1 watt on the 0425Z pass". This equates to an EIRP of as little as 26 watts which can be easily produced by even modest satellite stations. Audio with a picture were posted at: http://www.youtube.com/watch?v=0AFyZNAbOeA

+ John, K8YSE reported completing an unscheduled contact with KD8CAO on August 5 at 1125z. Signals were weak but readable.

+ Masa, JN1GKZ reported from Tokyo receiving his downlink signal during an eclipse pass on August 5, 1233-1240z with a clear and loud downlink though the elevation was less then 5 degrees.

145.919 MHz CW Beacons - OPERATIONAL

The CW transmissions will be callsign ID RS01S, select telemetry,
and callsigns of people actively involved with the ARISS program.

145.920 MHz SSB BPSK-1000 Telemetry - OPERATIONAL

AMSAT needs your telemetry from ARISSat-1/KEDR. Since there are no
"Whole Orbit Data" storage mechanisms onboard ARISSat-1/KEDR, your
submissions are the only way for AMSAT to collect the spacecraft
telemetry and KURSK experiment results.

+ Recorded file ARISSat-1/KEDR and Kursk telemetry CSV files (in the
   ARISSatTLM folder) can be sent as an e-mail attachment to:
   telemetry@arissattlm.org

+ If you are running ARISSatTLM and receiving the signal "live"
   from ARISSat-1/KEDR, please enable the telemetry forwarding option.

+ The latest telemetry can be seen LIVE on your computer or cell
   phone at: http://www.arissattlm.org/mobile

[ANS thanks the ARISSat-1/KEDR Team for the above information]

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SB SAT @ AMSAT $ANS-219.04
ARISSat-1/KEDR Reception Report Certificates

AMSAT News Service Bulletin 219.04
  From AMSAT HQ SILVER SPRING, MD.
August 7, 2011
To All RADIO AMATEURS
BID: $ANS-219.04

When you receive the downlink signal from ARISSat-1/KEDR you are
invited to send your report to the following e-mail boxes. You will
receive a PDF certificate by e-mail.

Students and school groups are especially welcome! We look forward
to your report!

Your report must contain the following information:

1) The signal you received:
    a) the secret word*,
    b) an SSTV image, or,
    c) telemetry data

2) Your name or group name

3) The date/time of reception

4) Your e-mail address of where to send your certificate. You will
    receive a PDF certificate via email.

Here are the e-mail boxes to send your reports:

Secret word* contest to: secretword@arissat1.org
SSTV image to: sstvreport@arissat1.org
Telemetry data to: tlmreport@arissat1.org
(either digital or voice report of the data you received)

Received BPSK telemetry and .CSV files should continue to be
sent to: telemetry@arissattlm.org.

* Those who do hear the secret word or call sign please do not put
   it out to the world. That would ruin the contest for those still
   waiting for their station to be in range.

You can find the details of the ARISSat-1/KEDR radio frequencies,
links to telemetry decoding software and mission details on-line at:
+ http://www.amsat.org
+ http://arissat1.org

ARISSat-1/KEDR can be accessed on these frequencies:
+ 145.950 MHz FM Downlink
+ 435 MHz - 145 MHz Linear Transponder
+ 145.919 MHz CW Beacon
+ 145.920 MHz SSB BPSK-1000 Telemetry

The latest telemetry can be seen LIVE on your computer or cell
phone at: http://www.arissattlm.org/mobile

TRACK STATUS on OSCAR STATUS PAGE

David Carr, KD5QGR has added ARISSat-1/KEDR to the list of satel-
lites at the popular "Live OSCAR Satellite Status Page" at:
http://oscar.dcarr.org/ You are invited to submit your reports
on this page.

[ANS thanks the ARISSat-1/KEDR Team for the above information]

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SB SAT @ AMSAT $ANS-219.05
AMSAT-UK Issues ARISSat-1/KEDR BPSK Reception Challenge

AMSAT News Service Bulletin 219.05
  From AMSAT HQ SILVER SPRING, MD.
August 7, 2011
To All RADIO AMATEURS
BID: $ANS-219.05

ARISSat-1 was deployed from the ISS on August 3. It has a composite
VHF downlink that will easily fit into the FUNcube Dongle (FCD) re-
ceive spectrum. The 145.920 MHz telemetry is 1000 bps BPSK and can,
of course, also be received with a normal SSB 2 metre receiver.

The signal levels from ARISSat-1 should be similar to those we expect
from the AMSAT-UK FUNcube-1 satellite (and also eventually from UKube-1)
and the AMSAT-UK team are keen to discover what will be the minimum and
best type of antennas for schools to use with a FUNcube Dongle (FCD)
Software Defined Radio (SDR). Therefore user experience with the
ARISSat-1 signals will be very valuable in making this determination.

To encourage everyone to receive the 145.920 MHz BPSK ARISSat-1 tele-
metry signal AMSAT-UK are offering a FUN reward for listeners!

There are a number of categories for this challenge -they include:

+ The first FCD user, from each continent, who can post a spectrum
   recording of the received signal together with evidence of decoding
   the data using the ARISSatTLM software and of sending it to the
   ARISSat data warehouse.

+ The first non-FCD user, from each continent, who can provide evidence
   of having decoded the signals and of sending it to the ARISSat data
   warehouse.

+ The listener, using a FCD or not, who can demonstrate satisfactory
   reception of the telemetry in the same ways as described above, using
   the "smallest" possible receive antenna. The actual closing date for
   this part of the challenge will be announced later.

+ All other entrants who can demonstrate that they have been having FUN!

Please submit your "entries", including your location, station details
(including FCD serial number where applicable), postal address and
reports to: g0auk@amsat.org

[ANS thanks AMSAT-UK and Trevor, M5AKA for the above information]

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SB SAT @ AMSAT $ANS-219.06
AMSAT History: 40th Anniversary of First Synchronous Satellite Proposal

AMSAT News Service Bulletin 219.06
  From AMSAT HQ SILVER SPRING, MD.
August 7, 2011
To All RADIO AMATEURS
BID: $ANS-219.06

July 24 marked the 40th anniversary of AMSAT's original SYNCART
proposal to NASA, in 1971, to fly a Synchronous Amateur Radio
Transponder on NASA's Applications Technology Satellite ATS-G.
NASA's response to our proposal appeared to be favorable, but
unfortunately NASA cancelled the ATS-G mission.

The SYNCART proposal is on AMSAT-DL's web site at for those who
would like to read it. It gives the justification why NASA should
fly it for free, listing a number of amateur experiments and appli-
cations, most of which would still apply today.

The 1971 WARC on Space Technology was held around the same time
(June 7 - July 17, 1971, in Geneva). That's the ITU conference that
established the amateur-satellite service and allocated frequencies
to it.

Several satellite manufacturers are now advertising that they host
payloads aboard their satellite platforms. Think how it would trans-
form amateur radio if we could get SYNCART packages aboard one or
more of them!

Read a copy of the original proposal at:
http://www.amsat-dl.org/images/stories/satellites/syncart/sync.pdf

AMSAT-DL article (in German) at:
http://www.amsat-dl.org/index.php/news-mainmenu-97/185-syncart

[ANS thanks AMSAT Past President Perry Klein, W3PK for this information]

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SB SAT @ AMSAT $ANS-219.07
ARISS Status - 1 August 2011

AMSAT News Service Bulletin 219.07
From AMSAT HQ SILVER SPRING, MD.
August 7, 2011
To All RADIO AMATEURS
BID: $ANS-219.07

1. Successful ARISS Contact with United Space School

On Saturday, July 30 a successful Amateur Radio on the International Space Station (ARISS) contact was held between students at United Space School in Seabrook, Texas and Mike Fossum, KF5AQG on the ISS. Station W6SRJ in California provided the connection. The United Space School is a once a year session of high school students that meets in the NASA/Clear Lake Area. Students come from around the world for a two week session, during which they stay with local host families while being mentored by astronauts, engineers, and scientists to design a mission to Mars as their team project. Class sessions are held at the University of Houston at Clear Lake. Students are given lessons on amateur radio and through the ARISS contact they learn firsthand what spaceflight is like. They will use this knowledge in their team project, which they will present to the Houston space community at the end of their session.

2. Astronaut Training Status

Mike Hopkins, KF5LJG is scheduled for an ARISS Basic Ops class on Monday, August 1. Hopkins is slated to fly with Expedition 37 in September 2013.

3. EE Times Runs ARISSat Blog

EE (Electronic Engineering) Times is running a blog called "Chips in Space - The Building of an Amateur Satellite" that will run over the next few weeks describing how the amateur radio satellite, ARISSat-1 was designed and built. The first entry has been posted: http://www.eetimes.com/electronics-blogs/chips-in-space/4218140/The-Building-of-an-Amateur-Satellite-1

[ANS thanks Carol, KB3LKI, for the above information]

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In addition to regular membership, AMSAT offers membership in the President's Club. Members of the President's Club, as sustaining donors to AMSAT Project Funds, will be eligible to receive additional benefits. Application forms are available from the AMSAT Office.

73,
This week's ANS Editor,
Lee McLamb, KU4OS